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ABSTRACT

This handout addresses the definition of assistive technology, how to assess assistive technology needs, and practical and ethical issues surrounding assistive technology. A functional assessment is urged to consider the following issues: (1) the special needs of the student; (2) the student's current abilities; (3) materials and equipment currently available that might meet those needs; (4) the physical arrangement and instructional arrangement in the environment; (5) support available in the school setting and home setting that will ensure carry-over between the environments; (6) resources that are available to the people supporting the students; (7) how activities could be modified to accommodate the student's needs; (8) activities the student needs to participate in and technology that would support the student's participation in those activities; (9) options that could be considered to develop a system for the student; (10) how those options can be explored in the student's normal environment; and (11) strategies that can be used to increase the student's level of performance and interaction with the technology. Considerations for preschool children and guidelines for including assistive technology in Individualized Education Programs are also provided. (CR)

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A Handout for Teachers

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NATIONAL ASSOCIATION OF SCHOOL PSYCHOLOGISTS

Assistive Technology

A Handout for Teachers

October 1997

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Definition of Assistive Technology

According to the Individuals with Disabilities Act (IDEA), an assistive device is "any item, piece of equipment, or product system, whether acquired commercially off the shelf, modified, or customized, that is used to increase, maintain or improve functional capabilities of children with disabilities." The provision of assistive technology devices and services may be special education, related services or supplementary aids and services to support a student with disabilities served in regular education (see 1997 Amendments to IDEA, Section 302).

Overview

Children with disabilities in schools present diverse problems for educators in the assessment of assistive technology needs, in the selection of specific interventions that are tailored to meet the individual needs and in writing IEP goals to reflect appropriate educational use of assistive or adaptive technology. Assistive devices in a classroom may range from low-cost, low-tech devices such as adaptive scissors or pencil grips to higher cost, high-tech items such as augmentative communication devices. Assistive technology devices are used both for students who need help participating in an educational program by remediating or correcting specific impairments such as hearing aides or communication devices, and to aid the student with specific learning deficits to perform specific tasks (e.g., using a spell checker).

According to a 1990 National Health Interview Survey on Assistive Devices sponsored by the National Center for Heath Statistics and National Institute for Disability and Rehabilitation Research, 13.1 million or 5.3% of the total U.S. populationin all age groups use assistive technology, but only 1% or about 1 million people under the age of 24 report using assistive technology devices. The devices listed in this survey include anatomical devices (braces/artificial limbs); mobility devices (crutches, wheel chairs); hearing/vision devices (white cane, hearing aides, TTY/TDD); speech/other devices (computer/typewriters); and accessibility features in homes (ramps, wider doors).

Looking at assistive technology needs and goals could be a daunting task unless some of the following issues and concerns are defined and discussed. Who can assess the assistive technology needs? What type of information is needed to make a decision about assistive technology needs? What are some of the practical and ethical concerns to look at when evaluating assistive technology needs? What are some guidelines for writing goals involving assistive technology?

Assessing assistive technology needs

The need for assistive technology required for the student to receive a FAPE (free and appropriate education) must be determined on a case by case basis as a part of the case study evaluation, IEP and placement process. The assessment team members could be composed of all or some of the following personnel: school administrator, speech and language pathologist, psychologist, classroom teacher, classroom aide, occupational therapist, physical therapist, social worker, student, parents, the designated case manager and other people who may be significantly involved in the student's education and well being. Assistive technology evaluations must be consistent with the requirements included in IDEA and with Part 300 of the Code of Federal Regulations regarding referrals, qualifications of personnel, time lines for completion and due process. Each district may establish assistive technology guidelines that determine who is responsible for gathering data necessary for decision making and for insuring that the referral process is correctly completed.

A functional assessment—looking at practical, daily life skills to be used by the individual in his/her natural environment— is needed to help answer some of the following questions:

- What are the special needs, educational needs or communication needs of the student?
- What are the student's current abilities (cognitive, learning style, adaptive behavior strengths and weaknesses)?
- What materials and equipment are currently available that might meet those needs?
- What is the physical arrangement and instructional arrangement in the environment?
- What support is available in the school setting and in the home setting that will insure carry-over between the environments?
- What resources are available to the people supporting the student?
- How could activities be modified to accommodate the student's needs?
- What activities does the student need to participate in and how would technology support the student's participation in those activities?
- What options could be considered (no tech, low-tech or high-tech) to develop a system for the student with the defined specific needs?
- How can those options be explored in the student's normal environment (home and school)?
- What strategies can be used to increase the student's level of performance and interaction with the technology?

Considerations for preschool children: Assistive technology needs for children birth to three are addressed under Part H of IDEA (see Part C of the 1997 Amendments), and are considered in the "natural" environment of the child such as home, preschool or daycare. Assistive devices for this population are required only if related to developmental needs, such as mobility, interacting with the environment, communicating/interacting with others, and performing cognitive tasks involving cause and effect and making choices. The decision regarding the need for assistive technology for the birth to three population is made on an individual basis through the Individual Family Service Plan (IFSP) process.

Practical and Ethical Issues

- Is the assistive technology device that is being considered developmentally appropriate for the student? Augmentative communication systems should be used in a developmentally appropriate hierarchy from the use of concrete objects (direct selection of objects, pictures and line drawings) to abstract symbols (pictographic symbols and traditional letters) followed by an elementary communication device with recorded messages.
- If scanning for a response is involved, does the student have the ability to visually track and make a consistent choice? Children below a developmental age of 48 months may have difficulty attending to a lengthy scanning process, making it more appropriate to begin with systems that utilize the actual objects or miniature objects glued to a board.
- Is the device socially and personally appropriate for the student? Students will not use equipment for long if the use of the device makes the child feel ostracized or too different from their classmates. The equipment may be state of the art but if the student is not willing or comfortable interacting with the equipment, it won't be used consistently. You may want to try out equipment before purchasing.
- Has the student's learning style been identified and is the device appropriate for that style? The child may be an auditory learner and need to interact verbally but the device may function with only a visual output such as portable communication devices that produce a typed message.

- Does the student have the motor ability and muscle tone to operate the device consistently? This question can usually be answered best by the physical therapist or the occupational therapist.
- How much training time will be needed for the student to use the device and how much time will be necessary to train the staff and parents to assist the student to use the equipment?
- Who is going to accept the responsibility for on-going training of new personnel who deal with the student regarding the use of the assistive technology?
- Where will the student use the device? Although intended for school use, will the device also benefit the student in other environments such as the home setting?
- How is the device to be funded? In some cases, the family's insurance provider might support some or all costs. The physical therapist will be helpful in determining appropriate options.

Guidelines for Writing I. E. P. Goals

If the IEP team determines that assistive technology is required for the student to receive a FAPE, the IEP team must include specific statements in the IEP to designate the devices or services that the child needs. The IEP must reflect the nature and the amount of services and the extent that the child will be able to participate in regular educational programs. The student's education team can use the data gathered during the assessment of assistive technology needs to write an IEP that includes the recommendations for assistive technology services, devices or both as appropriate. The assistive technology services or devices may be included as a part of the student's present level of performance, annual goals or short-term objectives. The technology itself can be used as an educational goal area when the student is learning the function and operation of the assistive device.

As a part of a short-term objective, the assumption can be made that the student has achieved the ability to operate the equipment but is now learning to use it in a specific situation. It can also be used as a condition within a short-term objective (e.g., the use of a spell checker to reduce spelling errors). They may be listed as supplementary aids and services that need to be provided in order for the student to function in the least restrictive environment or in a list of related services necessary for the student to benefit from his or her educational programming.

Resources

Blackman, J. A. (1995). *Technology in early intervention.* Gaithersburg, MD: Aspen Publishers.

Church, G. & Glennen, S. (1992). *The handbook of assistive technology.* San Diego, CA: Singular Publishing Group, Inc.

National Rehabilitation Information Center: *<http://www.naric.com/naric>* or 800-346-2742. The NARIC is a library and information center on disability and rehabilitation funded by the National Institute on Disability and Rehabilitation Research. The web site includes information about the latest federally funded research grants, list of data bases (several states are listed individually with assistive technology resources), services available and indexes to specific topics.

Rehabilitation Engineering and Assistive Technology Society of America (RESNA) is an interdisciplinary association: 1700 N. Moore St., Ste. 1540, Arlington VA 22209; (703) 524-6686; *<http://www.resna.org/resna/reshome.htm>*

ABLEDATA is an electronic database of information on assistive technology and rehabilitation equipment: 8455 Colesville Rd., Ste. 935, Silver Spring, MD 20910; (800) 227-0216; *<http://www.abledata.com/index.htm>*

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